

a chamber exhaust for exhausting said load lock chamber, said chamber exhaust including an atmospheric pressure vent line and a vacuum exhaust line, said vacuum exhaust line connected to said load lock chamber and to be connected to a vacuum pump, one end of said atmospheric pressure vent line being an open end and an other end of said atmospheric pressure vent line being connected vacuum exhaust line,

a moving mechanism provided in said load lock chamber for moving said substrate;

91. a local exhaust for locally exhausting a dust generating portion of said moving mechanism;

a flow rate regulator in one of said gas supply, said chamber exhaust and said local exhaust;

a first valve disposed at an intermediate portion of said vacuum exhaust line;

a second valve disposed at an intermediate portion of said atmospheric pressure vent line;

a pressure detector for detecting pressure in said load lock chamber; and

a controller for controlling said first and second valves such that during movement of said substrate by said moving mechanism, said first valve is closed and said second valve is opened, and for controlling said flow rate regulator in accordance with a signal from said pressure detector to keep a inside of said load lock chamber at a higher pressure level than an atmospheric pressure during movement of said substrate by said moving mechanism.

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16. (Five Times Amended) A substrate processing apparatus comprising:

82. a substrate processing chamber for processing a

substrate;

a load lock chamber;

a gas supply for supplying gas into said load lock chamber;

a chamber exhaust connected with said load lock chamber for exhausting said load lock chamber;

a moving mechanism provided within said load lock chamber for moving said substrate;

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a first vacuum exhaust line which is to be connected to a vacuum pump and which is connected with said load lock chamber;

a second vacuum exhaust line which is connected with said substrate processing chamber and said first vacuum exhaust line;

a local exhaust for locally exhausting a dust generating portion of said moving mechanism, one end of said local exhaust being connected with said first vacuum exhaust line and an other end of said local exhaust being connected to a space covered by a cover for covering a dust generating portion of the moving mechanism;

a first valve connected to an intermediate portion of said local exhaust;

a second valve provided at a portion of said first vacuum exhaust line between said load lock chamber and a connection portion of said first and second vacuum exhaust lines; and

a valve controller for controlling said first and second valves, said valve controller controlling said second valve to be closed during processing of said substrate in said substrate processing chamber.

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